

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

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## PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing (day/month/year) <b>22 FEB 2007</b>	
Applicant's or agent's file reference <b>093144-9030 WO</b>	<b>FOR FURTHER ACTION</b> See paragraph 2 below
International application No. <b>PCT/US05/31248</b>	International filing date (day/month/year) <b>01 September 2005</b>
Priority date (day/month/year)	
International Patent Classification (IPC) or both national classification and IPC <b>IPC(8) - F42B 39/14 (2007.01)</b> <b>USPC - 250/506.1, 515.1; 86/50</b>	
Applicant <b>VULCAN LEAD, INC.</b>	

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

### 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Date of completion of this opinion  <b>11 January 2007</b>	Authorized officer:  <b>Blaine Copenheaver</b>  <small>PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774</small>
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Form PCT/ISA/237 (cover sheet) (April 2005)

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US05/31248

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of:

- ☒ the international application in the language in which it was filed  
☐ a translation of the international application into \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing  
☐ table(s) related to the sequence listing

b. format of material

- ☐ on paper  
☐ in electronic form

c. time of filing/furnishing

- ☐ contained in the international application as filed  
☐ filed together with the international application in electronic form  
☐ furnished subsequently to this Authority for the purposes of search

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US05/31248

**Box No. V Reasoned statement under Rule 43b/s.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Claims	1-42	YES
	Claims	None	NO
Inventive step (IS)	Claims	None	YES
	Claims	1-42	NO
Industrial applicability (IA)	Claims	1-42	YES
	Claims	None	NO

**2. Citations and explanations:**

Claims 1-42 lack(s) an inventive step under PCT Article 33(3) as being obvious over Rogers et al. (3,820,435) in view of Mussman (5,883,394).

Regarding claims 1, 11, 13, 14, 19, 20, 22, 23, 26, 29-31, 36, 39 and 40, Rogers et al. disclose a device containment vessel substantially as claimed as shown in Figures 1-4 and 8 to reduce the exposure to radioactive material (col.1, lines 16-31) shielded by a panel shaped to complement a contour of the vessel. However, Rogers et al does not disclose a plurality of panels with overlapping seams or the radiation material formed of lead and stainless steel. Mussman teaches, in the analogous field of radiation containment, a plurality of panels with overlapping seams (as shown in Fig.1) along with the radiation material formed of lead and stainless steel (col.8, lines 40-47) both as an alternative radiation shielding material and panel configuration. It would have been obvious to one skilled in the art at the time of invention to modify Rogers et al's panel to consist of a plurality of panels with overlapping seams along with the radiation material formed of lead and stainless steel, both as an alternative radiation shielding material and panel configuration taught by Mussman.

Regarding claims 2, 3, 15, 17, 27, 28, 41 and 42 wherein the panels are arranged to surround an exterior surface of the vessel and wherein the panels are positioned adjacent an interior surface of the vessel (Rogers et al., top of Fig.3, "2").

Regarding claims 4, 12, 21, 32 and 37, further comprising an end cap formed of radiation shielding material, the end cap positioned at one end of the plurality of panels to cap an opening formed at the end of the plurality of panels and further comprising a door, the door shield coupled to an exterior surface of the door (Rogers et al., Fig.2, "4").

Regarding claims 5-7, 16, 24 and 33-35, further comprising a frame wherein the vessel is at least partially disposed within the frame and the panels are coupled to the frame and wherein the frame is mounted to the vessel and wherein the vessel is supported by a base and the frame is mounted to the base (Rogers et al., Fig.1).

In regard to claims 8, 10, 18, 25 and 38, and further comprising a supplemental shield formed of a radiation shielding material and selectively coupled to the frame, the supplemental shield being positioned relative to the plurality of panels wherein the plurality of panels are positioned between the supplemental shield and the vessel (Rogers et al, Figs.1-2, "24").

Regarding claim 9, the use of lead wool blanket is disclosed in Mussman (col.2, lines 12-15) as an obvious shield material. It would have been obvious to one skilled in the art at the time of invention to modify Rogers et al's supplemental shield to include a lead wool blanket, as taught by Mussman, to provide a cost effective, readily available material for the supplemental shield.

Claims 1-42 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.